

WHAT IS CLAIMED IS:

1. A hermetically sealed compressor assembly comprising:  
a housing;  
an electric motor disposed in said housing;  
a compression mechanism disposed in said housing and operatively coupled to said motor;  
a terminal assembly comprising a cup-shaped terminal body extending through and sealingly attached to said housing, said terminal assembly having electrically conductive pins extending through and insulated from said terminal body;  
a cluster block assembly connected to said terminal assembly, said pins electrically connected to said motor through said cluster block assembly, said cluster block assembly including a cluster block which is fitted to said terminal body;  
a cavity being defined between the interior of the cup-shaped terminal body and an interfacing surface of said cluster block; and  
a dielectric material substantially filling at least one of said cavity and substantially all free volume within said cluster block assembly.
2. The hermetic compressor assembly of Claim 1, wherein said dielectric material substantially conforms to the surfaces over which it extends.
3. The hermetic compressor assembly of Claim 1, wherein said cavity is closed and has no means of ingress for said dielectric material thereinto.
4. The hermetic compressor assembly of Claim 1, wherein said cluster block provides a means of ingress for said dielectric material thereinto.
5. The hermetic compressor assembly of Claim 1, wherein said cluster block provides a means of ingress for said dielectric material into said cavity.

6. The hermetic compressor assembly of Claim 1, wherein said dielectric material is one of an epoxy and a dielectric polymer.

7. The hermetic compressor of Claim 6, wherein said dielectric material is a cured gel and is substantially solid.

8. The hermetic compressor assembly of Claim 1, further comprising jacketed wires through which said pins and said motor are electrically connected, and wherein said cluster block further comprises passages through which said lead wires extend, said passages also containing a portion of said dielectric material in contact with the jackets of said wires.

9. A hermetically sealed compressor assembly comprising:  
a housing;  
an electric motor disposed in said housing;  
a compression mechanism disposed in said housing and operatively coupled to said motor;

a terminal assembly comprising a cup-shaped terminal body extending through and sealingly attached to said housing, said terminal assembly having electrically conductive pins extending through and insulated from said terminal body;

a cluster block assembly connected to said terminal assembly, said pins electrically connected to said motor through said cluster block assembly, said cluster block assembly including a cluster block which is fitted to said terminal body; and

a liquid dielectric material which has been placed within at least one of said cluster block and a cavity defined by said cluster block assembly and said terminal assembly, whereby the electrical connection between said cluster block assembly and said terminal assembly is insulated.

10. The hermetic compressor assembly of Claim 9, wherein said dielectric material substantially conforms to the surfaces over which it extends.

11. The hermetic compressor assembly of Claim 9, wherein said dielectric material is injected subsequent to the connection of said cluster block assembly to said terminal assembly.

12. The hermetic compressor assembly of Claim 9, wherein said dielectric material is placed prior to the connection of said connector assembly to said terminal assembly.

13. The hermetic compressor of Claim 9, wherein said dielectric material is cured after being placed, whereby said dielectric material becomes substantially solid.

14. The hermetic compressor assembly of Claim 9, wherein said dielectric material is one of an epoxy and a dielectric polymer.

15. The hermetic compressor assembly of Claim 9, further comprising jacketed wires which are electrically connected to said pins and said motor, and wherein said cluster block further comprises passages through which said wires extend, said passages containing a portion of said dielectric material which is in contact with the jackets of said wires.

16. A method for insulating an electrical connection within a hermetically sealed compressor assembly, comprising:

placing a dielectric gel into a terminal assembly having at least one conductor pin;

placing the dielectric gel into a cluster block assembly having at least one connector;

connecting the cluster block assembly and the terminal assembly together  
whereby the pin and the connector are electrically coupled; and

allowing the dielectric gel to cure into a substantially solid state.

17. The method of Claim 16, wherein the dielectric gel is one of an epoxy and a dielectric polymer.

18. The method of Claim 16 wherein said steps of placing the dielectric gel comprise injecting the dielectric gel into the cluster block assembly via an aperture in the cluster block assembly.

19. The method of Claim 18, wherein said step of injecting is performed after said step of connecting the cluster block assembly and the terminal assembly together.

20. The method of Claim 16, wherein said steps of placing the dielectric gel are each performed prior to said step of connecting the cluster block assembly and the terminal assembly together.

21. A hermetically sealed compressor assembly comprising:  
a housing;  
an electric motor disposed in said housing;  
a compression mechanism disposed in said housing and operatively coupled to said motor;

a terminal assembly comprising a cup-shaped terminal body extending through and sealingly attached to said housing, said terminal assembly having a plurality of conductor pins extending through and insulated from said terminal body;

a cluster block assembly in communication with said terminal assembly, said cluster block assembly including a cluster block which is fitted to said terminal body, said cluster block having free volume therein;

an interface between the interior of said cup-shaped terminal assembly and said cluster block assembly defining a cavity between the interior of the cup-shaped terminal body and said cluster block;

said plurality of conductor pins electrically connected to said motor through said cluster block assembly; and

a dielectric material substantially filling at least one of said cavity and said cluster block free volume.

22. The hermetic compressor assembly of Claim 21, wherein said dielectric material substantially conforms to the surfaces over which it extends.

23. The hermetic compressor assembly of Claim 21, wherein said cavity is closed and has no means of ingress thereinto once said cluster block assembly is fitted to said terminal assembly.

24. The hermetic compressor assembly of Claim 21, wherein said cluster block provides a means of ingress for said dielectric material thereinto.

25. The hermetic compressor assembly of Claim 24, wherein said cluster block provides a means of ingress for said dielectric material into said cavity.

26. The hermetic compressor assembly of Claim 21, wherein said dielectric material is one of an epoxy and a dielectric polymer.

27. The hermetic compressor of Claim 21, wherein said dielectric material is a cured gel and is substantially solid.